

**REMARKS**

**I. Status of Claims**

Claims 1-20 are pending. Applicant amended claims 1, 19, and 20 to further define the protecting element. This amendment is supported by the specification, for example, at Figure 1. Applicant submits that no new matter has been added by these amendments.

Applicant respectfully acknowledges that the Examiner has indicated that claims 13 and 16 would be allowable if rewritten in independent form including all of the limitations of the base claim.

**II. Specification Objection**

The Examiner objected to the use of the phrase "is provided" in the abstract. Final Office Action, page 3. Applicant submits that the currently amended Abstract obviates the Examiner's objections and respectfully request the Examiner to withdraw the objection to the specification.

**III. Rejection Under 35 U.S.C. § 102(b)**

The Examiner has rejected claims 1-5, 10-12, 14, 15, 19, and 20 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 3, 562,401 ("Long") for the reasons disclosed at pages 3-4 of the Final Office Action. Applicant respectfully traverses this rejection for at least the reasons previously presented and reasons presented below.

A rejection under § 102 is proper only when the claimed subject matter is identically described or disclosed in the prior art. *In re Arkley*, 455 F.2d 586, 587

(C.C.P.A. 1972). “For anticipation under 35 U.S.C. § 102, the reference must teach every aspect of the claimed invention either explicitly or impliedly.” M.P.E.P.

§ 706.02. Moreover, in order to anticipate the claimed invention, a reference must clearly and unequivocally disclose the claimed composition to one of ordinary skill in the art “without any need for picking, choosing and combining various disclosures.” *In re Arkley*, 455 F.2d at 587. Importantly, missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference. See *Structural Rubber Prods. Co. v. Park Rubber Co.*, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984).

Applicant submits that Long fails to disclose, at a minimum, the claim limitation: “a protecting element positioned between the superconducting conductor and the inner tube of the cryostat; wherein the protecting element is tubular.” By whatever means the protecting element is formed, it has a shape like a tube running through the cable. See, e.g., AMERICAN HERITAGE COLLEGE DICTIONARY, at 1453 (3<sup>rd</sup> ed. 1997). For example, Applicant’s tubular protecting element can comprise at least one layer of tape, wire, sheet, or combinations thereof. *Specification* at page 4, lines 7-10; see also, claim 5. Such one or more layers of tape, wire, sheet, or combinations thereof creates a tubular protecting element, which is positioned between the superconducting conductor and the inner tube of the cryostat. See, e.g., *specification* at Figure 1.

The Examiner has relied upon the disclosure of Figure 2 in the ’412 patent to teach the claimed element of having “a protecting element positioned between the

superconducting conductor and the inner tube of the cryostat.” Final Office Action, pages 3-4. The Examiner argues that Long's disclosed solid dielectric supports (150) anticipate Applicant's protecting element. Applicant submits that Figure 2 does not meet this newly recited claim limitation. In particular, Long teaches a dielectric support that is not tubular. See '401 patent at Figure 1, element (50); *id.* at Figure 2, element (150); *id.* at Figure 3, element (52); *id.* at Figure 4, elements (54), (55), and (56). Moreover, Long teaches that its solid dielectrics “are used only to the extent required to physically support the electrical conductor within the transmission line.” '401 patent at col. 2, lines 1-3. Thus, Long expressly teaches that there should be regions within the superconducting cable that are not “protected” by the solid dielectric support element of Long. Thus, only Applicant's protecting element is positioned between the superconducting conductor and the inner tube of the cryostat, and has a tubular shape.

Accordingly, for these reasons, claims 1, 5, and 20 and all claims that depend therefrom are patentable over the cited prior art. Applicant requests that the Examiner withdraw the rejection of Claims 1-5, 10-12, 14, 15, 19, and 20 under 35 U.S.C. § 102(b).

#### **IV. Rejection Under 35 U.S.C. § 103(a)**

The Examiner has rejected claims 6-9 under 35 U.S.C. § 103(a) as obvious over Long for the reasons disclosed at pages 5-6 of the Final Office Action; rejected claim 17 under 35 U.S.C. § 103(a) as obvious over Long in view of U.S. Patent No. 6,512,113 (“Metra”) for the reasons disclosed at page 6 of the Final Office Action;

and rejected claim 18 under 35 U.S.C. § 103(a) as obvious over Long in view of U.S. Patent No. 6,509,819 ("Snitchler") for the reasons disclosed at page 7 of the Final Office Action. Applicant respectfully traverses these rejection for at least the reasons presented below.

To establish a *prima facie* case of obviousness under 35 U.S.C. § 103, the Examiner bears the burden of establishing each of three requirements. First, the references must teach or suggest each and every element recited in the claims. See M.P.E.P. § 2143.03. Second, the Examiner must establish that some suggestion or motivation, either in the reference itself, or in the knowledge generally available to one of ordinary skill in the art, to combine the references to achieve the presently claimed invention. See M.P.E.P. § 2143.01. Third, the Examiner must establish a reasonable expectation of success for the proposed combination. See M.P.E.P. § 2143.02. Moreover, each of these requirements must "be found in the prior art, and not be based on applicant's disclosure." M.P.E.P. § 2143.

At a minimum, the Examiner cannot establish that the references teach or suggest each and every element recited in the claims. See M.P.E.P. § 2143.03. As discussed above and incorporated by reference herein in full, Long fails to teach or suggest the claim limitation: "a protecting element positioned between the superconducting conductor and the inner tube of the cryostat; wherein the protecting element is tubular."

As previously noted, Long teaches that its solid dielectrics supports "are used only to the extent required to physically support the electrical conductor within the

transmission line." '401 patent at col. 2, lines 1-3. In fact, Long teaches that these dielectric supports are discrete elements. See *id.* at Figures. One skilled in the art, considering the full disclosure of this dielectric element in Long, would apply Long's selection rules and not be motivated to form a tubular element. Moreover, the Long reference does not expressly recognize the need to protect the semiconductor. Instead, Long teaches that the dielectric support should be installed at suitable intervals to adequately support the electrical conductors. *Id.* at col. 4. lines 34-37. Since the dielectric supports of Long are installed in intervals, there are regions within the superconductor where there is no support present. Conversely, Applicants include "a protecting element positioned between the superconducting conductor and the inner tube of the cryostat; wherein the protecting element is tubular." A tubular element substantially uniformly distributes the external pressure over its whole surface. *Specification* at page 3. Consequently, one skilled in the art would not have arrived at Applicant's protecting element from the disclosure of the dielectric support element of Long.

Applicant submits that nothing in the secondary references, whether alone or in combination, correct this deficiency of Long.

Since it is imperative that claims 6-9, 17, and 18 be read in light of independent claim that they depend from, Applicant respectfully submits that neither Long, Metra, nor Snitchler teach or suggest all the present claim limitations found in the presently rejected claims. Thus, Applicant respectfully request that they be withdrawn.

**V. CONCLUSION**

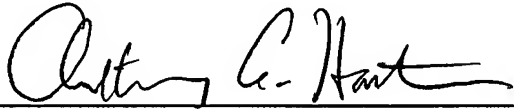
In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account no. 06-0916.

Respectfully submitted,

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